

We Claim

1. (Currently amended) A process for hydroprocessing a hydrocarbon feed containing Conradson carbon using at least two reactors in which the hydrocarbon feed is subjected sequentially to the steps of

- hydroprocessing in a first hydroprocessing reactor, in which it is subjected sequentially to a hydrodemetallization step, a hydrodesulfurization step carried out at a temperature higher than that of said hydrodemetallization step, and an asphaltene removal step carried out at a temperature higher than that of said hydrodesulfurization step,
- hydroprocessing in a second hydroprocessing reactor, in which it is subjected sequentially to a hydrodesulfurization step and an asphaltene removal step, which latter is carried out at a temperature higher than that of said hydrodesulfurization step.

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2. (Currently amended) The process of claim 1 wherein the hydrodemetallization step is carried out using a hydrodemetallization catalyst, the hydrodesulfurization step is carried out using a hydrodesulfurization catalyst, and asphaltene removal is carried out using an asphaltene removal catalyst.

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3. (Currently amended) The process of claim 2 wherein the hydrodemetallization catalyst comprises a Group VIB metal component on a porous oxide carrier, the catalyst having a surface area of 50-200m²/g and an average pore diameter of 10-35 nm, wherein the hydrodesulfurization catalyst comprises a Group VIB metal component and a Group VIII metal component on a porous oxide carrier, the catalyst having a surface area of 50-400 m²/g and an average pore diameter of 5-20 nm, and wherein the asphaltene removal catalyst comprises a Group VIB metal component on a porous oxide carrier, the

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catalyst having a surface area of 50-200m²/g and an average pore diameter of 10-35 nm.

4. (Currently amended) The process of claim 2 wherein the hydrodesulfurization catalyst has a Group VIB metal content which is at least 2 wt.% higher than the Group VIB metal content of the hydrodemetallization catalyst and the Group VIB metal content of the asphaltene removal catalyst.

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5. (Currently amended) The process of claim 2 wherein the hydrodesulfurization catalyst has an average pore diameter which is at least 1 nm below the average pore diameter of the hydrodemetallization catalyst and the average pore diameter of the asphaltene removal catalyst.

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6. (Currently amended) The process of claim 1, wherein a third hydroprocessing reactor is applied downstream of the second hydroprocessing reactor, in which third hydroprocessing reactor at least part of the effluent of the second hydroprocessing reactor is subjected sequentially to a hydrodesulfurization step and an asphaltene removal step, which latter is carried out at a temperature higher than that of said hydrodesulfurization step.

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7. (Currently amended) The process of claim 1, wherein a third hydroprocessing reactor is applied downstream of the second hydroprocessing reactor, in which third hydroprocessing reactor at least part of the effluent of the second hydroprocessing reactor is subjected to a hydrodesulfurization step.

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8. (Currently amended) The process of claim 1, wherein a further hydroprocessing reactor is applied between the first hydroprocessing reactor and the second hydroprocessing reactor, in which further hydroprocessing reactor at least part of the effluent of the first hydroprocessing reactor is subjected to a hydrodesulfurization step.

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with at least part of the effluent of the further hydroprocessing reactor being led to the second hydroprocessing reactor.

9. (Currently amended) The process of claim 1 wherein the feed is a heavy hydrocarbon feed of which at least 40 wt.% boils above 538°C and which comprises at least 2 wt.% of sulfur and at least 5 wt.% of Conradson Carbon.

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10. (Currently amended) The process of claim 1 wherein in the first reactor the temperature in the hydrodesulfurization zone is at least 2°C above the temperature in the preceding hydrodemetallization zone, while in the first, second, and optional further reactors the temperature in the asphaltene removal zones is at least 2°C above the temperature in the respective preceding hydrodesulfurization zones.

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